

# Work Order ID 73999

Tuesday, September 20, 2011 10:28:59 AM



Page 1

Item ID: D206-642-541

Accept



Setup Start



Revision ID:

Stop



Item Name: Replacement Skidtube

Start Date: 9/20/2011 Start Qty: 1.00



Cust Item ID:

Required Date: 10/11/2011 Req'd Qty: 1.00



Customer:

Reference:

Approvals:

Process Plan:

MF

Date: 11-09-20

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop



Sequence ID/  
Work Center ID

Operation  
Description

Set Up/  
Run Hours

Tool ID

Tool #

Plan  
Code

Accept  
Qty

Reject  
Qty

Reject  
Number

Insp.  
Stamp

Draw Nbr

Revision Nbr

D3274

D

IIN-D206-642

Rev M

100

0.00



DOCUMENT CONTROL

DC

0.00

Memo

Document Control

Photocopy bluefile & type labels per PPP D206-642-541

CHG003

512/01/09

MLJ 12-1-9  
①

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
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**NOTE:** Date & initial all entries

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Description

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Accept  
Qty

Reject  
Qty

Reject  
Number

Insp.  
Stamp

110

0.00



Skidtubes

Skidtubes

Memo

0.00

\*\*\*\*VERIFY AND INSPECT THE MATERIAL PRIOR TO USE\*\*\*\*

1- Bend FWD end of tube using bend prog D3274 FWD and foil 10 as per dwg D3274, cut fwd end of tube with saw table setup D3274.

DP

11-10-6

2- remove fwd indexing ridge as per dwg D3274. Prepare for welding

BB 11/12/12

3- weld fwd cap as per dwg D3274 and QSI004  
AR Aluminum Rod Batch: M117889

BB 11-12-12

4- grind fwd cap weld on top surface only

5- Cut AFT end of tube at 170.9" as per dwg D3274 and deburr end.

6-Drill Aft cap pilot hole using DT8025

7 -Cleco DT8025 in position and install pilot hole drill Jig DT8742A,B,C,D.  
Drill 3/16" pilot holes as per Dwg D3274

BB 11/12/12

8 -Remove inner indexing ridge on aft end of skidtube as per Dwg D3274 scribe batch #

9 -Open aft end cap holes to Ø0.208" as per Dwg D3274. Deburr aft end.

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Approvals:

Process Plan:

Date:

Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Run

Start

Stop

Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run Hours

Tool ID

Tool #

Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

114

QC5- Inspect part completeness to step on W/O

0.00



QC

Memo

0.00

Quality Control

116

QC10- Inspect visual per QSI004- ground welds

0.00



QC

Memo

0.00

Quality Control

120

Chemical Conversion Coat per QSI005 4.1

0.00



HandFinish

Memo

0.00

Hand Finishing

11-12-13

W/O:		WORK ORDER CHANGES					
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Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Run Start

Stop

Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run Hours

Tool ID

Tool # Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

130

QC3- Inspect Part Finish

0.00



QC

Memo

0.00

Quality Control

DD

11-12-13

150

Skidtubes

0.00



Skidtubes

Memo

0.00

Skidtubes

1-Open Ø0.313" and 0.375" crossbolt spacer holes as per Dwg D3274

2-Deburr crossbolt spacer holes as per Dwg D3274 and blow out chips from inside the tube

3-Bond web in place as per Dwg D3274 &amp; QSI 015.

A/R ☐ Sikaflex-291 ☐ 119399 ☐Sikaflex expire date: ☐ 12-08-13 ☐Start: ☐ 15:30 ☐ Time: ☐Finish: ☐ Time: ☐

(Adhere for 12 hours)

&gt;

&gt; BB/BB

11/12/13  
11/12/13

W/O:		WORK ORDER CHANGES					
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Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop



Sequence ID/  
Work Center ID

Operation  
Description

Set Up/  
Run Hours

Tool ID Tool # Plan  
Code

Accept  
Qty

Reject  
Qty

Reject  
Number

Insp.  
Stamp

160



QC

Quality Control

QC5- Inspect part completeness to step on W/O

0.00

Memo

0.00

11-12-14

170



Skidtubes

Skidtubes

Skidtubes

Memo

0.00

0.00

1-Bend AFT end of tube using bend prog. D3274 AFT as per dwg D3274. Install drop pins in crossbolt spacer holes to maintain web position.

2- DRILL PILOT HOLES FOR WEARPLATES USING D3274-1.T2  
OPEN HOLES TO .297" . Deburr

3-DRILL TOE PIN HOLE .640" DIA AS PER DWG USING DT8935 FWD  
END OF TUBE  
DEBURR INSIDE OF HOLE AS NECESSARY (DO NOT ENLARGE HOLES)  
REMOVE ANY FOREIGN OBJECTS INSIDE OF TUBES

4- Countersink crossbolt spacer holes as per Dwg D3274

5- prepare for welding

MO 11-12-14

11-12-21

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

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Reference:

Cust Item ID:

Customer:

Approvals:

Process Plan:

Date:

Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Run Start

Stop

Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run Hours

Tool ID

Tool #

Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

180



QC

Quality Control

QC5- Inspect part completeness to step on W/O

0.00

4.7°

3.0"

Memo

0.00

1

0

BE 11/12/15

190



Skidtubes

Skidtubes

Skidtubes

Memo

0.00

0.00

1-Insert D2649 & D3275-1 crossbolt spacers. Weld as per QSI 004 and Dwg D3274. Remember to back drill each hole before welding the other side. Use aluminum rod  
A/R ☐ Aluminum Rod M117809

BE 11-12-15

3-Grind cross bolt welds flush as per Dwg D3274.

4-Counterbore 5/16" x 0.750" deep as per Dwg D3274 and deburr.

11-12-21

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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Start Date: 9/20/2011 Start Qty: 1.00



Cust Item ID:

Required Date: 10/11/2011 Req'd Qty: 1.00



Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop



Sequence ID/  
Work Center ID

Operation  
Description

Set Up/  
Run Hours

Tool ID

Tool #

Plan  
Code

Accept  
Qty

Reject  
Qty

Reject  
Number

Insp.  
Stamp

200

QC5- Inspect part completeness to step on W/O

0.00

8/17/21



QC

Memo

0.00

Quality Control

210

QC10- Inspect visual per QSI004- ground welds

0.00

8/17/21



QC

Memo

0.00

Quality Control

220

Pressure Wash per QSI005 4.3

0.00

8/17/21 11-12-22



HandFinish

Memo

0.00

Hand Finishing

Re-alodine tube as per QSI 005 section 4.1.2.1 do not acid etch

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

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Customer:

Reference:

Run Start



Approvals:

Process Plan:

Date:

Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Stop



Sequence ID/  
Work Center ID

Operation  
Description

Set Up/  
Run Hours

Tool ID

Tool #

Plan  
Code

Accept  
Qty

Reject  
Qty

Reject  
Number

Insp.  
Stamp

230

White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum

0.00



Powdercoat

Powder Coating

Memo

START TIME:

OVEN TEMPERATURE:

FINISH TIME:

0.00

0.00

0.00

0.00

240

QC3- Inspect Part Finish

0.00



QC

Quality Control

Memo

0.00

250

HandFinishing

0.00



HandFinish

Hand Finishing

Memo

1-Install Nut Plate as per Dwg D3274. Apply LPS-3 to Nut Plate and rivets.

A/R ☐ N/A ☐ LPS-3 ☐

2-Install inserts as per Dwg D3274. Use a drop of Sikaflex inside insert holes a

A/R ☐ ☐ Sikaflex-291 ☐

Sikaflex expire date:

0.00

1X10 m-f 11/12/22

1 BR 11-12-28.

1 BR 11-12-28.

m11a480

11:30  
320  
12:00

14596

11/14/13

12-1

W/O:		WORK ORDER CHANGES					
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Approvals:

Process Plan:

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Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop



Sequence ID/  
Work Center ID

Operation  
Description

Set Up/  
Run Hours

Tool ID

Tool #

Plan  
Code

Accept  
Qty

Reject  
Qty

Reject  
Number

Insp.  
Stamp

260

QC5- Inspect part completeness to step on W/O

0.00



QC

Memo

0.00

5 11/2/20

4

Quality Control

Inspect Nut Plate & Inserts

270

HAND FINISHING RESOURCE #1

0.00



HandFinish

Memo

0.00

Hand Finishing

1-Install wearpads & gaskets as per Dwg D3274.

2-Install ring as per Dwg D3274

A/R ☐ Sikaflex-291 ☒ 119443 ☐

Sikaflex expire date: ☐ 12-1 ☐

3-Inspect for foreign objects as per QSI 024

4-Spray inside of tube on both sides of web with LPS-3

A/R LPS-3 Batch: N/A

5-Install Aft Cap and seal with Sikaflex. Clean excess adhesive.

A/R ☐ Sikaflex-291 ☒ 119443 ☐

Sikaflex expire date: ☐ 12-1 ☐

1 BR 11-1228.

W/O:		WORK ORDER CHANGES					
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QC:

Date:

SPC (Y/N):

Date:

Stop

Sequence ID/  
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DescriptionSet Up/  
Run Hours

Tool ID

Tool #

Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

280



QC

Quality Control

QC5- Inspect part completeness to step on W/O

0.00

Memo

0.00

Sulic/30

(4)

290



Packaging

Packaging

Identify as per dwg &amp; Stock Location: 73

0.00

Memo

0.00

Red

12/1/10

300



QC

Quality Control

QC21- Final Inspection - Work Order Release

0.00

Memo

0.00

12/1/10

ME  
12-01-10

W/O:		WORK ORDER CHANGES					
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# Picklist Print

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Page 1

Work Order ID: 73999

Parent Item: D206-642-541

Parent Item Name: Replacement Skidtube


Start Date: 9/20/2011

Required Date: 10/11/2011


Start Qty: 1.00

Required Qty: 1.00

Comments: IPP Rev:B 05.09.23 Revised per D206-642 Rev. J KJ/JLM  
 IPP Rev:C 07-02-23 Added SS Wearplates & Gaskets JLM  
 IPP Rev:D 07-12-06 replace NAS1515H3L to D3672-1 DD  
 IPP Rev:E 08-04-17 as per PAR 08-015 DD verified by:EC  
 IPP Rev:F 08-06-02 add comment DD verified by:EC  
 IPP Rev:G 08-10-09 revise details DD verified by:EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D2600-1-190  Extrusion Round 3" 206		Manufactured	No			110	Each	71.4000	1	1			

Location	Loc Qty	Loc Code
HALL	71.4	
39874	13.4	
69622	58	

D3285-1  Cap		Manufactured	No			110	Each	89.0000	1	1			
--	--	--------------	----	--	--	-----	------	---------	---	---	--	--	--

Location	Loc Qty	Loc Code
LG002	89	
52511	42	
52647	47	

D3282-041  Float Web (206L/407)		Manufactured	No			150	Each	13.0000	1	1			
---	--	--------------	----	--	--	-----	------	---------	---	---	--	--	--

Location	Loc Qty	Loc Code
LG	13	
70050	10	
72838	3	

74294

① DP 11-10-6

BEI-12-12

① B/E 11/12/13

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Start Date: 9/20/2011

Required Date: 10/11/2011

Start Qty: 1.00

Required Qty: 1.00

D2649  
Cross Bolt Spacer

Manufactured No

190

Each

289.0000

12

Location Loc Qty

LG B-76793 6  
68224 2  
71355 2  
72704 2

LG001 283

65317 1

68507 11

73390 271

Loc Code

D3275-1  
Crossbolt Spacer

Manufactured No

190

Each

244.0000

12

Location Loc Qty

LG B-74437 138  
72123 138

LG002 106

66930 106

Loc Code

CR3212-4-03

Cherry Rivet

Purchased No

250

Each

1,138.000

2

Location Loc Qty

FP-B 2

110139 2

ST311 1136

114859 1136

Loc Code

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Shop Packet Print

Page 2

W/O:		WORK ORDER CHANGES					
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Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries



# Picklist Print

Tuesday, September 20, 2011 10:28:56 AM

Page 3

Work Order ID: 73999

Parent Item: D206-642-541

Parent Item Name: Replacement Skidtube

Start Date: 9/20/2011

Required Date: 10/11/2011

Start Qty: 1.00

Required Qty: 1.00

D3415-041 Manufactured No

250

Each

46.0000

1

1



Nut Plate



BR 11-12-28

Location

Loc Qty

Loc Code

ST053

46

33842

2

67605 ✓

44

1

CCR264SS3-3

Purchased No

250

Each

435.0000

2

2



BR 11-12-28

Cherry Rivet

Location

Loc Qty

Loc Code

FP-B

2

113973

2

ST311

433

117086

23

117849 ✓

410

2

ALS4-1032-130

Purchased No

250

Each

502.0000

78

78



Insert

Location

Loc Qty

Loc Code

ST281

370

118386

370

ST282

132

117717

46

118237

48

118312

38

\* ALS7-1032-130

119530

78 BR 11-12-28

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

# Picklist Print

Tuesday, September 20, 2011 10:28:57 AM

Page 4

Work Order ID: 73999



Parent Item: D206-642-541



Parent Item Name: Replacement Skidtube

Start Date: 9/20/2011

Required Date: 10/11/2011

Start Qty: 1.00

Required Qty: 1.00

D3536-15 Manufactured No

270

Each

18.0000

1

1



Gasket



BR 11-12-28

Location

Loc Qty

Loc Code

FP011

18

71586 ✓

13

72881

5

D3536-23 Manufactured No

270

Each

14.0000

1

1



Gasket



BR 11-12-28

Location

Loc Qty

Loc Code

FP011

14

43406

1

69902

1

71579

12

D3536-35 Manufactured No

270

Each

17.0000

1

1



Gasket



BR 11-12-28

Location

Loc Qty

Loc Code

FP012

17

71587

8

72882

9

D3536-39 Manufactured No

270

Each

16.0000

1

1



Gasket



BR 11-12-28

Location

Loc Qty

Loc Code

FP015

16

69760 ✓

16

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Shop Packet Print

Page 4

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Picklist Print

Tuesday, September 20, 2011 10:28:57 AM

Page 5

Work Order ID: 73999

Parent Item: D206-642-541

Parent Item Name: Réplacement Skidtube

Start Date: 9/20/2011

Required Date: 10/11/2011

Start Qty: 1.00

Required Qty: 1.00

D3535-15 Manufactured No

270 Each

17.0000

1 1



Wearshoe

Location

Loc Qty

Loc Code

FP007

12

73006

12

FP018

5

69931

5

D3535-35 Manufactured No

270 Each

6.0000

1 1



Wearshoe

Location

Loc Qty

Loc Code

FP018

6

67598

1

70815

5

D3535-39 Manufactured No

270 Each

15.0000

1 1



Wearshoe

Location

Loc Qty

Loc Code

FP018

15

69759

2

72159

13

D3535-23 Manufactured No

270 Each

14.0000

1 1



Wearshoe

Location

Loc Qty

Loc Code

FP021

14

70818

4

71581

10

BR 11-12-28.

BR 11-12-28.

BR 11-12-28.

BR 11-12-28.

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Picklist Print

Tuesday, September 20, 2011 10:28:57 AM

Page 6

Work Order ID: 73999

Parent Item: D206-642-541

Parent Item Name: Réplacement Skidtube

Start Date: 9/20/2011

Required Date: 10/11/2011

Start Qty: 1.00

Required Qty: 1.00

D3537-3 Manufactured No

270

Each

21.0000

1

1



Wearpad



BR 11-12-28.

Location

Loc Qty

Loc Code

FP 73305.  
70481

4

4

FP017

17

35697

1

72144

11

72686

5

1 -

D3537-1 Manufactured No

270

Each

70.0000

9

9



Wearpad



BR 11-12-28.

Location

Loc Qty

Loc Code

FP001 74867.  
72124

60

60

FP016

3

68944

0

70687

3

FP017

7

69817

5

70686

2

9.

AN960C10L \* NAS1149C0332 ✓ Purchased No

270

Each

0.0000

80

80



washer

117736.



80,

BR 11-12-28

AN960C416 \* NAS1149C0463 ✓ Purchased No

270

Each

0.0000

1

1



washer

117735.



1

BR 11-12-28

Tuesday, September 20, 2011 10:28:57 AM

Shop Packet Print

Page 6

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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**NOTE:** Date & initial all entries



# Picklist Print

Tuesday, September 20, 2011 10:28:57 AM

Page 7

Work Order ID: 73999

Parent Item: D206-642-541

Parent Item Name: Réplacement Skidtube

Start Date: 9/20/2011

Required Date: 10/11/2011

Start Qty: 1.00

Required Qty: 1.00

D3672-1 Manufactured No

270

Each

1,080.000

2

2



Phenolic Washer



BR 11-12-28

## Location

## Loc Qty

## Loc Code

ST074

1078

64177

86

66821 ✓

492

72229

500

ST077

2

52505

2

2

AN3C4A

Purchased

No

270

Each

2,700.000

80

80



BOLT



BR 11-12-28

## Location

## Loc Qty

## Loc Code

ST350

2700

117313

2

117688

5

117872

22

118112

16

118451

969

118628

186

118706 ✓

500

118838

1000

80

AN4C5A

Purchased

No

270

Each

483.0000

1

1



BOLT



BR 11-12-28

## Location

## Loc Qty

## Loc Code

FP-B

94

112243 ✓

94

ST345

389

112243

389

1

Tuesday, September 20, 2011 10:28:57 AM

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Page 7

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Picklist Print

Tuesday, September 20, 2011 10:28:57 AM

Page 8

Work Order ID: 73999



Parent Item: D206-642-541



Parent Item Name: Réplacement Skidtube

Start Date: 9/20/2011

Required Date: 10/11/2011

Start Qty: 1.00

Required Qty: 1.00

D2646

Manufactured No

270

Each

88.0000

1

1



Aft Cap



BR 11-12-28

Location

Loc Qty

Loc Code

FP004

73805

44

68280

44

FP006

5

62678

5

FP-4

35

70945

1

71070

34

fp5

4

71038

4

1.

D3413-1

Manufactured No

270

Each

59.0000

1

1



Ring



BR 11-12-28

Location

Loc Qty

Loc Code

ST420

75478

19

66387

1

70773

18

ST467

40

72137

20

73298

20

1.

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

**DART**

RELEASED

07.02.12

DEO ATTACHED

DESIGN CP	DRAWN BY PH	DART AEROSPACE USA, INC. PORT HADLOCK, WA	
CHECKED H	APPROVED H	DRAWING NO. D3274	REV. D SHEET 1 OF 4
DATE 06.12.19		TITLE SKIDTUBE ASSEMBLY SCALE NTS	
A	04.03.15	NEW ISSUE	
B	04.08.09	MOVE SADDLE HOLE: 42.14 WAS 42.76	
C	05.03.16	ADD -043; NEW INSERTS	
D	06.12.19	NEW INSERTS, SS WEARSHOE + GASKET	

Qty -041	Qty -043	Part Number	Description
X		D3274-041	SKIDTUBE ASSEMBLY
	X	D3274-043	SKIDTUBE ASSEMBLY
1	1	D2600-1-240	EXTRUSION
1	1	D2646	AFT CAP
12	12	D2649	CROSS BOLT SPACER
12	37	D3275-1	CROSS BOLT SPACER
1	1	D3282-041	FLOAT WEB
1	1	D3285-1	CAP
1	1	D3413-1	RING
1	1	D3415-041	NUT PLATE
1	1	D3535-15	WEARSHOE
1	1	D3535-23	WEARSHOE
1	1	D3535-35	WEARSHOE
1	1	D3535-39	WEARSHOE
1	1	D3536-15	GASKET
1	1	D3536-23	GASKET
1	1	D3536-35	GASKET
1	1	D3536-39	GASKET
9	9	D3537-1	WEARPAD
1	1	D3537-3	WEARPAD
78	78	ALS7-1032-130	INSERT (or AKS4-1032-130, ALS4-1032-130, AELS-1032-130)
80	80	AN3C4A	BOLT
1	1	AN4C5A	BOLT
1	1	AN960C416	WASHER
80	80	AN960C10L	WASHER
2	2	CCR264SS3-3	RIVET
2	2	CR3212-4-03	RIVET
2	2	NAS1515H3L	WASHER

**GENERAL NOTES:**

1. TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
2. DAMAGE TOLERANCE ON FWD BEND:  
THERE SHOULD BE NO VISIBLE WRINKLES IN THE BEND FROM THE GROUND TO A HEIGHT OF 7 INCHES ABOVE THE GROUND. IT IS ACCEPTABLE TO POLISH OUT GOUGES UP TO 0.020 DEEP IN THE BENT PORTION OF THE TUBE. A MAXIMUM REDUCTION IN DIAMETER OF 0.150" IS ACCEPTABLE IN THE BENT PORTION OF THE TUBE.
3. ALL HOLES DRILLED ON CENTERLINES.
4. BOND D3282-041 FLOAT WEB INTO D3274-1/-3 OUTER TUBE WITH NON-STRUCTURAL SIKAFLEX-241/291 ADHESIVE PER DART QSI 015. ENSURE HOLES LINE-UP.
5. WELDING TO BE DONE PER DART QSI 004.
6. FINISH: - ACID ETCH, ALODINE ASSEMBLY PER DART QSI 005 4.1  
- POWDER COAT WHITE (REF. 4.3.5.1) PER DART QSI 005 4.3
7. DRILL Ø0.297 HOLES FOR ALS7-1032-130 INSERTS USING DT3274-1T2 BEFORE FINISH. INSTALL ALS7-1032-130 INSERTS AFTER FINISH. SEAL WEARSHOE BOLTS WITH SIKAFLEX -241/-291.
8. SPRAY INSIDE OF TUBE WITH A COAT OF LPS LABORATORIES "LPS-3" AFTER FINISH AND INSTALLATION OF INSERTS. COAT ALL EXPOSED FASTENERS WITH LPS LABORATORIES "LPS PROCYON" AFTER FINAL ASSEMBLY, CLEAN EXCESS OFF POWDER COATING WITH MEK DEGREASER.

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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

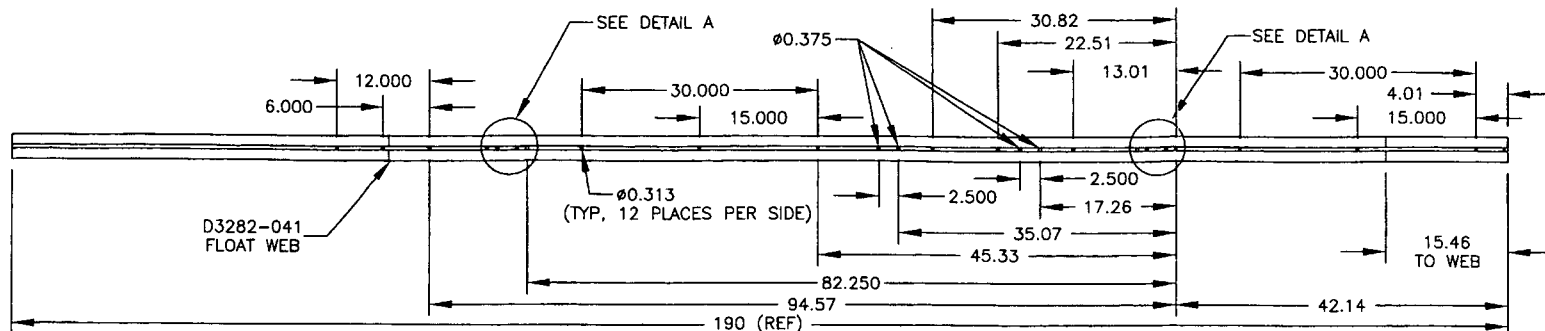
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Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

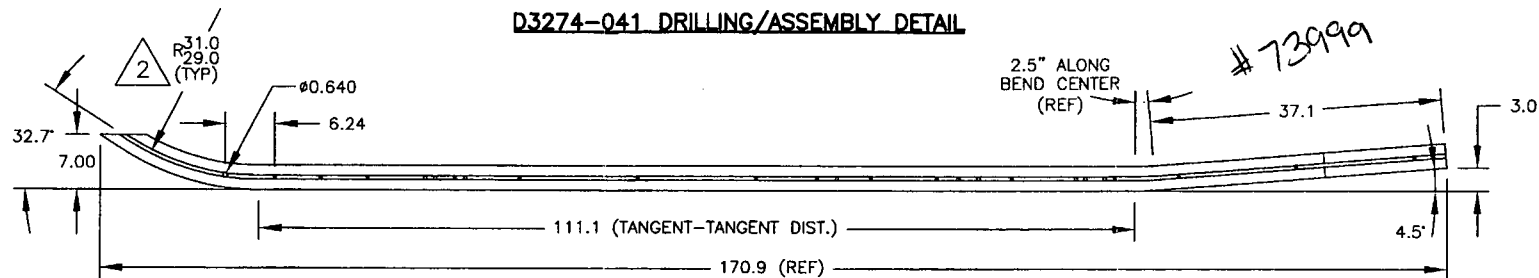
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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

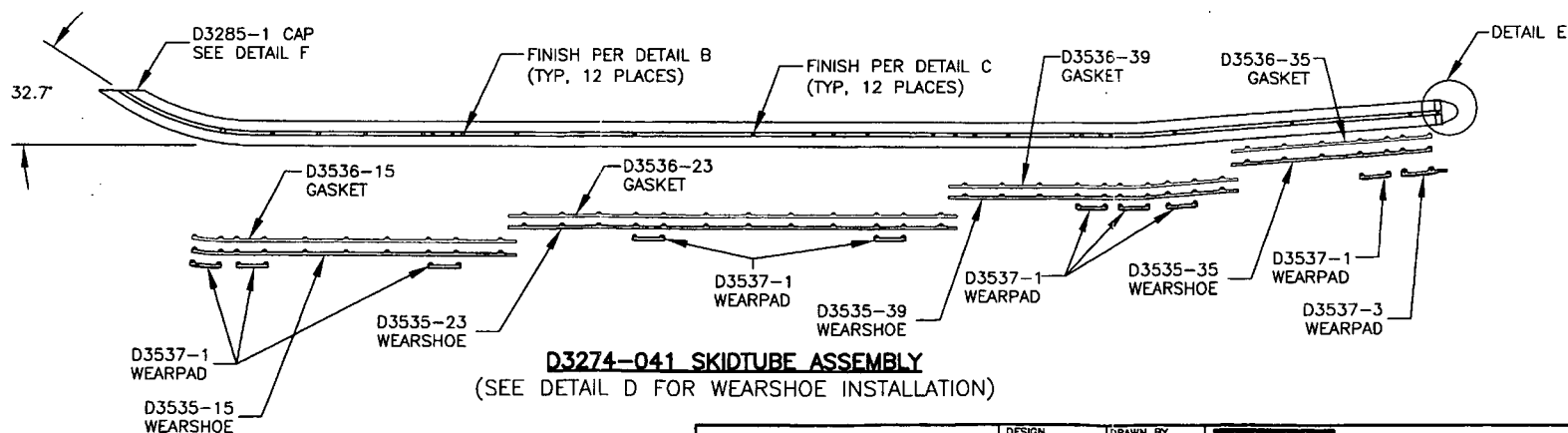
DEO ATTACHED



**D3274-041 DRILLING/ASSEMBLY DETAIL**



**D3274-041 BEND/DRILLING DETAIL**



**D3274-041 SKIDTUBE ASSEMBLY**  
(SEE DETAIL D FOR WEARSHOE INSTALLATION)

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DESIGN CP	DRAWN BY PH	<b>DART</b> DART AEROSPACE USA, INC. PORT HADLOCK, MA
CHECKED #	APPROVED #	DRAWING NO. D3274
DATE 06.12.19	TITLE SKIDTUBE ASSEMBLY	REV. D SHEET 2 OF 4 SCALE 1:15

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

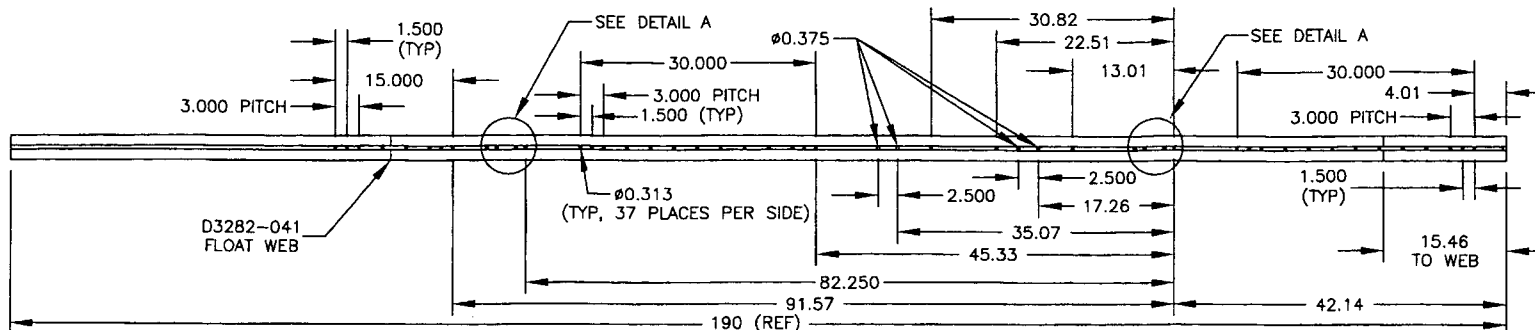
Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

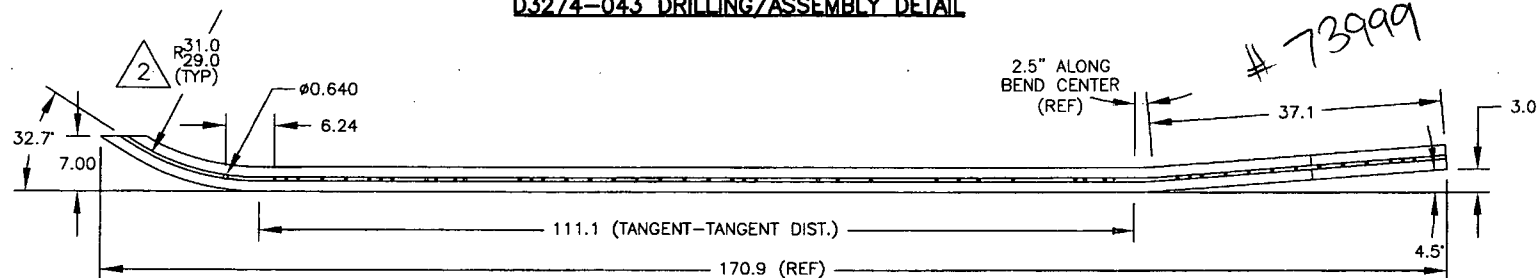
**NOTE:** Date & initial all entries



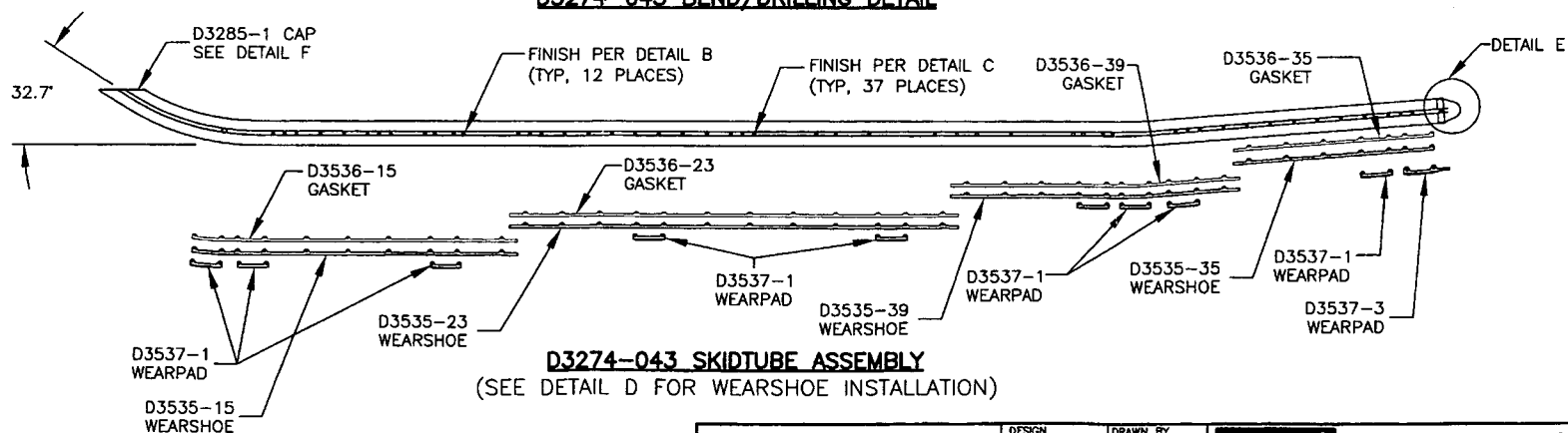
DEO ATTACHED



**D3274-043 DRILLING/ASSEMBLY DETAIL**



**D3274-043 BEND/DRILLING DETAIL**



**D3274-043 SKIDTUBE ASSEMBLY**  
(SEE DETAIL D FOR WEARSHOE INSTALLATION)

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DESIGN CP	DRAWN BY PH	<b>DART</b> DART AEROSPACE USA, INC. PORT HADLOCK, OH
CHECKED H	APPROVED H	DRAWING NO. D3274
DATE 06.12.19	TITLE SKIDTUBE ASSEMBLY	REV. D SHEET 3 OF 4 SCALE 1:15

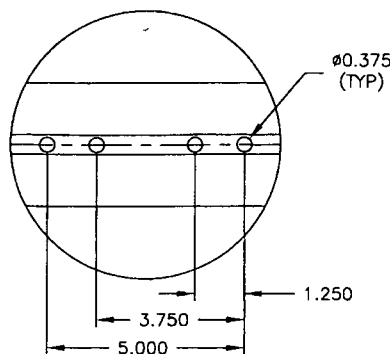
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_  
 Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

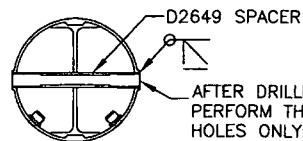
NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action      Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

# **DETAIL A: DRILL DETAIL**

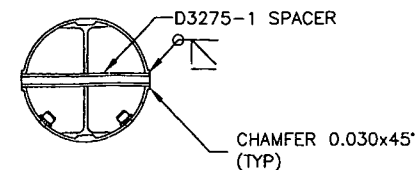


# **DETAIL B** FOR 0.375 HOLES ONLY

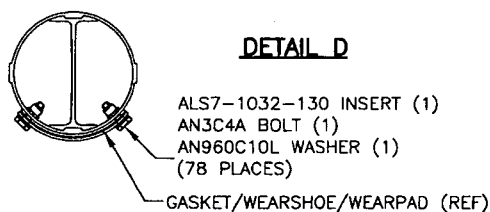


- AFTER DRILLING AND BENDING ASSEMBLY  
PERFORM THE FOLLOWING FOR 0.375  
HOLES ONLY:
1. CHAMFER HOLE 0.030x45°
  2. INSERT D2649 SPACER
  3. WELD INTO PLACE AND GRIND FLUSH
  4. C'BORE TO 0.313x0.75 DEEP

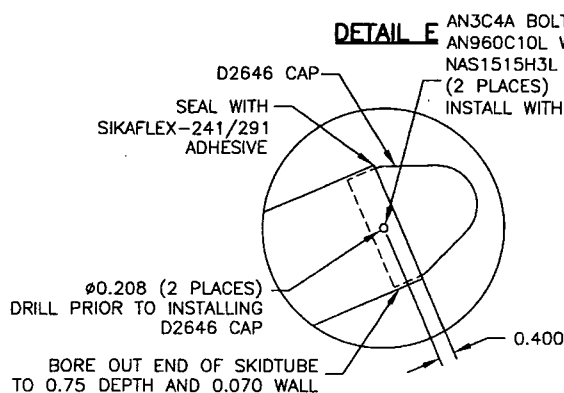
# **DETAIL C** FOR 0.313 HOLES ONLY



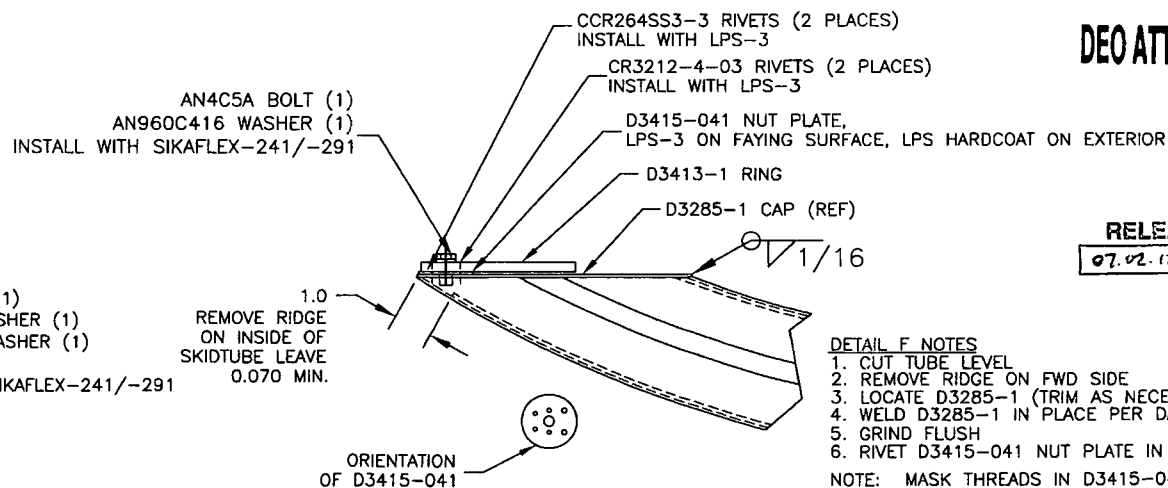
# **DETAIL D**



# **DETAIL E**



# **DETAIL F: END FINISHING DETAIL**



- DETAIL F NOTES**
1. CUT TUBE LEVEL
  2. REMOVE RIDGE ON FWD SIDE
  3. LOCATE D3285-1 (TRIM AS NECESSARY)
  4. WELD D3285-1 IN PLACE PER DART QSI 004
  5. GRIND FLUSH
  6. RIVET D3415-041 NUT PLATE IN PLACE
- NOTE: MASK THREADS IN D3415-041  
PRIOR TO FINISH

DEO ATTACHED

RELEASED  
07.02.12

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DESIGN CP	DRAWN BY PH	<b>DART</b> DART AEROSPACE USA, INC. PORT HADLOCK, MA
CHECKED H	APPROVED H	DRAWING NO. D3274
DATE 06.12.19	TITLE SKIDTUBE ASSEMBLY	REV. D SHEET 4 OF 4 SCALE 1:3

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
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**NOTE:** Date & initial all entries

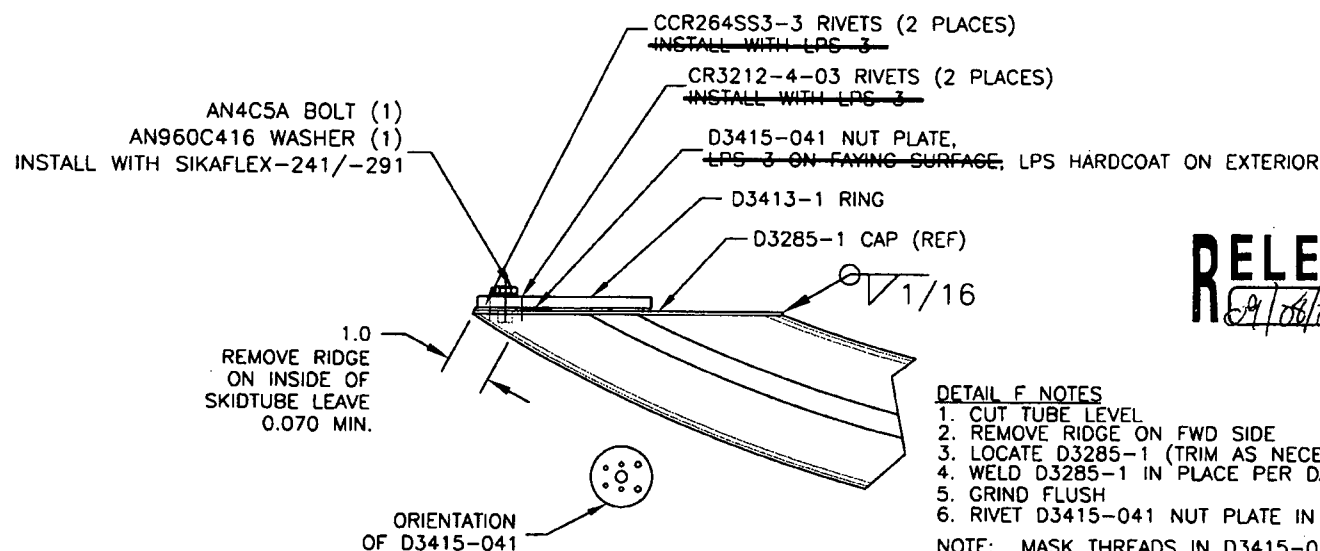
DRAWING NO. D3274	TITLE SKIDTUBE ASSEMBLY	REV. D	DART AEROSPACE USA, INC ENGINEERING ORDER		D.E.O. NO. D3274-D-1	SHEET NO. SHEET 1 OF 1	SCALE NTS
DRAWN <i>UP</i>	CHECKED <i>[Signature]</i>	MFG. APPR. <i>[Signature]</i>	APPROVED <i>[Signature]</i>		DE APPR. <i>[Signature]</i>		
DATE 09.06.17	DATE 09.06.23	DATE 09/06/23	DATE 09/06/23		DATE 09.06.23		

LPS-3 IS NO LONGER USED DURING ASSEMBLY OF SKIDTUBE.

AMEND NOTE 8: "~~SPRAY INSIDE OF TUBE WITH A COAT OF LPS LABORATORIES 'LPS 3' AFTER FINISH AND INSTALLATION OF INSERTS.~~  
COAT ALL EXPOSED FASTENERS WITH LPS LABORATORIES 'LPS PROCYON' AFTER FINAL ASSEMBLY, CLEAN EXCESS OFF  
POWDER COATING WITH MEK DEGREASER."

AMEND DETAIL F AS SHOWN:

### DETAIL F: END FINISHING DETAIL



**RELEASED**  
09/06/23

#### DETAIL F NOTES

1. CUT TUBE LEVEL
2. REMOVE RIDGE ON FWD SIDE
3. LOCATE D3285-1 (TRIM AS NECESSARY)
4. WELD D3285-1 IN PLACE PER DART QSI 004
5. GRIND FLUSH
6. RIVET D3415-041 NUT PLATE IN PLACE

NOTE: MASK THREADS IN D3415-041  
PRIOR TO FINISH

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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

NO. 278

AWS D17.1.2001  
QUALIFICATION TEST RECORD

Name: Barclay Elliot  
Job number: 766119  
Part number: 206-642-151  
Description: 206 skid tube  
Welding Process: Tig ☒ Mig ☐  
Base material: Aluminum  
Current: AC ☒ DC ☐

TEST REQUIREMENTS AND RESULTS

Visual: pass ☒ fail ☐  
Penetration: pass ☒ fail ☐

UNACCEPTABLE

Cracks: pass ☒ fail ☐  
Undercut: pass ☒ fail ☐  
Pin holes: pass ☒ fail ☐  
Overlap (cold lap): pass ☒ fail ☐  
Porosity (surface): pass ☒ fail ☐  
Coloration: pass ☒ fail ☐

Qualifier Pat. Dunn Date of Test Coupon 11-12-20  
Welder Barclay Elliot Date of Test Coupon 11-12-20

The above named individual is qualified in accordance with AWS D17.1.2001 to weld

